

ABSTRACT OF THE DISCLOSURE

An apparatus for determining the spring rate of a torsion bar for an automotive vehicle includes a frame having two channels which cross between the ends of the frame. Each channel is configured to receive a torsion bar – one when a bar is to be twisted clockwise and the other when a bar is to be twisted counterclockwise. Mounted on the frame at its head end is an adjustable pneumatic cylinder having a piston which exerts a torque on the torsion bar through a long torque arm. At the tail end of the frame is a measuring unit against which a short torque arm that is connected to the opposite end of the bar bears, thus resisting the torque applied by the pneumatic cylinder and registering a force derived from the torque. A key engages the piston of the pneumatic cylinder to hold it in a predetermined extended position and the piston can be set to extend no farther than that position as well, all so that a known deflection corresponds to a force measured by the display. The piston at its center has a depression and the long torque arm has an adjusting screw, the end of which seats in the depression when the piston is retracted, thus establishing a fixed distance between the axis of the torsion bar and the end of the adjusting screw. That distance is then fixed, so as the piston moves to its extended positions the effective length of the long torque arm does not change.